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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/820,520	03/28/2001	Masato Yonezawa	07977/270001/US4820	5433

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SCOTT C. HARRIS
Fish & Richardson P.C.
4350 La Jolla Village Drive, Suite 500
San Diego, CA 92122

EXAMINER

ALEJANDRO MULERO, LUZ L

ART UNIT PAPER NUMBER

1763

DATE MAILED: 02/25/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/820,520

Applicant(s)

YONEZAWA ET AL.

Examiner

Luz L. Alejandro

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 25 November 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-4 and 6-21 is/are pending in the application.
- 4a) Of the above claim(s) 15-19 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4, 6-14, 20 and 21 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 25 November 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1-4 and 6-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Admitted prior art in view of Williams, U.S. Patent 5,614,026 and further in view of Izu et al., U.S. Patent 4,410,558.

Admitted prior art shows the invention substantially as claimed including a film formation apparatus comprising: a vacuum chamber; an introducing means 206 for introducing a gas into the chamber; an exhaust means for exhausting the gas from the vacuum chamber to the outside; a first mesh-like showerhead plate electrode 203,204

for supplying an electric energy inside the chamber; a second grounded electrode 202 opposing the first electrode for supplying the electric energy inside the vacuum chamber; a supporting means for supporting a substrate 201 opposing the first electrode and a transporting means for transporting a flexible substrate including at least one selected from a winding and an unwinding roll (see applicant's description of the roll to roll method at paragraph bridging pages 1 and 2), wherein an introducing port is located adjacent to an electrode side surface of the substrate, wherein a plurality of openings are located on a surface of the first electrode opposing the substrate, and wherein said first electrode is located below said second electrode (see Fig. 2A and page 3, line 16 to page 4, line 3 of specification). Note that for purposes of claim interpretation, the first and second electrodes described above represent the second and first electrodes of claim 10.

Admitted prior art fails to expressly disclose wherein the gas is exhausted from the plurality of openings which are circular, and wherein said gas inlet port is located in a position between the substrate and the second electrode. Williams discloses a showerhead whereby concentric openings are contained within the showerhead for exhausting the gas (see abstract and Fig. 3(a)). In view of this disclosure, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the apparatus of the Admitted prior art so as to exhaust gas from the openings in the showerhead as suggested by Williams because this results in greater uniformity of the gas at the substrate surface (see col. 2-lines 13-16). With respect to the shape of the openings for exhausting the gas, the particular shape of the openings is a matter of

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choice which a person of ordinary skill in the art would have found obvious absent persuasive evidence that the particular configuration of the claimed openings are significant. Regarding the location of the gas inlet port, Izu et al. discloses a gas inlet port 52 located in a position between the substrate 50 and an electrode 58 (see fig. 3 and col. 4-line 23 to col. 7-line 19). In view of this disclosure, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the apparatus of Admitted prior art modified by Williams so as to include a gas inlet between the substrate and the second lower electrode as suggested by Izu et al. because this allows for uniform distribution of the gas across the entire substrate.

Moreover, concerning the gas being introduced into said chamber in a direction parallel with said first direction, the admitted prior art in fig. 3 discloses an apparatus in which gas 305 is introduced in a direction that is parallel with a direction of the substrate 301 (see fig. 3 and page 3, lines 3-5 and page 4-line 24 to page 5-line 15 of the specification). In view of this disclosure, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the apparatus of the Admitted prior art modified by Williams and Izu et al. so as to introduce the gas in the direction parallel to the first direction as suggested by fig. 3 of the Admitted prior art because this is shown to be conventional. Furthermore, it would have been a matter of a design choice to determine the optimum direction of gas flow and would not lend patentability to the instant application absent the showing of unexpected results.

Claims 20-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Admitted prior art in view of Williams, U.S. Patent 5,614,026 and Izu et al., U.S. Patent 4,410,558, as applied to claims 1-4 and 6-14 above, and further in view of Komino et al., U.S. Patent 6,156,151 or Yamazaki, U.S. Patent 4,808,553.

Admitted prior art, Williams and Izu et al. are applied as above but do not expressly disclose that the apparatus further comprises an abnormal discharge preventing plate between the exhaust means and the electrode and having plurality of openings. Komino et al. discloses a plasma apparatus comprising an exhaust means and a plate 118 having a plurality of openings 118a for preventing discharge (see, figs. 1, 4, 7, 9A, 9B, 10 or 11, and their descriptions). Additionally, Yamazaki discloses a plasma apparatus comprising an exhaust means 14 and a plate 20' comprising a plurality of openings which will prevent abnormal discharge from entering the exhaust means. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the apparatus of Admitted prior art modified by Williams and Izu et al., as to further comprise a plate as claimed because abnormal discharge can be prevented in the exhaust means.

Response to Arguments

Applicant's arguments with respect to claims 1-4, 6-14, and 20-21 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Luz L. Alejandro whose telephone number is 571-272-1430. The examiner can normally be reached on Monday to Thursday from 7:30 to 6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gregory L. Mills can be reached on 571-272-1439. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Luz L. Alejandro
Primary Examiner
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February 19, 2004